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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,755	10/22/2001	Young-Kwon Cho	678-757 (P9993)	7574

28249 7590 05/17/2006

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EXAMINER
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FILE, ERIN M

ART UNIT	PAPER NUMBER
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2611

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/037,755

**Applicant(s)**

CHO ET AL.

**Examiner**

Erin M. File

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1-18 have been considered but are moot in view of the new ground(s) of rejection.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4 and 10-1<sup>3</sup>~~4~~ are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent No. 5,960,029), Kishi (U.S. Patent No. 6,888,813), and Johnston (U.S. Patent No. 5,481,614).

**Claims 1, 10**, Kim discloses modulating in phase and quadrature channels (fig. 1, 13) and spreading the modulated signals by an orthogonal code (fig. 1, 15). Kim fails to disclose generating a modulated pilot channel at a designated phase, however, Kishi discloses a known phase value is subjected to modulation and then spreading with a

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specific spreading code to obtain a pilot signal (col. 2, lines 11-14). Because Kishi discloses that this method has the advantage of suppressing disturbance due to fading, etc., (col. 2, lines 17-21), it would have been obvious to one skilled in the art at the time of invention to incorporate the modulation and spreading method of Kishi into Kim. Further, although neither Kim nor Kishi disclose the burst pilot channel transmits side information being dependent on the transmission data according to at least one of the phase, and the complex channel and the orthogonal code, Johnston discloses a bit flag which specifies the coding mode of the band to transmit side information (col. 21, lines 3-6). Because Johnston discloses that this method of coding has the advantage in being adaptive in time (col. 21, lines 3-6), it would have been obvious to one skilled in the art at the time of invention to incorporate the side information transmission method of Johnston into the combined inventions of Kim and Kishi.

**Claims 2, 11,** Neither Kim, Kishi, nor Johnston disclose the modulated pilot symbol has a length of 128 chips, however, at the time of invention, it would have been obvious to a person of ordinary skill in the art to adjust pilot length of 128 chips. Applicant has not disclosed using this particular code length provides an advantage, is used for a particular purpose, or solves a stated problem. Further, the specification discloses that the burst pilot channel can vary from 64 to as many as 1,024 chips. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with pilot bursts of varying sizes. Therefore, it would have been obvious to

one of ordinary skill in this art to modify Na to obtain the invention as specified in Claim 2.

**Claims 3, 12,** Neither Kim, Kishi, nor Johnston disclose the modulated pilot symbol has a length of 64 chips. However, it would be obvious to one skilled in the art to use a modulated pilot symbol of a length of 64 chips as is described in Claim 2 above.

**Claims 4, 13,** Kim further discloses a complex channel including an I channel and a Q channel (fig. 1).

4. Claims 5, 7, 8, 14, 16, 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent No. 5,960,029) and Kishi (U.S. Patent No. 6,888,813).

**Claims 5, 14,** Kim discloses modulating in phase and quadrature channels (fig. 1, 13) and spreading the modulated signals by an orthogonal code (fig. 1, 15). Kim fails to disclose generating a modulated pilot channel at a designated phase, however, Kishi discloses a known phase value is subjected to modulation and then spreading with a specific spreading code to obtain a pilot signal (col. 2, lines 11-14). Because Kishi discloses that this method has the advantage of suppressing disturbance due to fading, etc., (col. 2, lines 17-21), it would have been obvious to one skilled in the art at the time of invention to incorporate the modulation and spreading method of Kishi into Kim.

**Claims 7, 8, 16, 17**, Kim discloses modulating in phase and quadrature channels (fig. 1, 13) and spreading the modulated signals by an orthogonal code (fig. 1, 15). Kim further discloses an indexed orthogonal spreading code is used to spread the signals (fig. 1, 15), indicating that this code is one of a plurality of codes. Kim fails to disclose generating a modulated pilot channel at a designated phase, however, Kishi discloses a known phase value is subjected to modulation and then spreading with a specific spreading code to obtain a pilot signal (col. 2, lines 11-14). Because Kishi discloses that this method has the advantage of suppressing disturbance due to fading, etc., (col. 2, lines 17-21), it would have been obvious to one skilled in the art at the time of invention to incorporate the modulation and spreading method of Kishi into Kim.

5. Claims 6, 9, 15 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim et al. (U.S. Patent No. 5,960,029), Kishi (U.S. Patent No. 6,888,813), and Bottomley (U.S. Patent No. 6,515,980).

**Claims 6, 15**, Kim discloses modulating in phase and quadrature channels (fig. 1, 13) and spreading the modulated signals by an orthogonal code (fig. 1, 15). Kim fails to disclose generating a modulated pilot channel at a designated phase, however, Kishi discloses a known phase value is subjected to modulation and then spreading with a specific spreading code to obtain a pilot signal (col. 2, lines 11-14). Because Kishi discloses that this method has the advantage of suppressing disturbance due to fading,

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etc., (col. 2, lines 17-21), it would have been obvious to one skilled in the art at the time of invention to incorporate the modulation and spreading method of Kishi into Kim.

Although neither Kim nor Kishi disclose the modulated pilot output on a designated complex channel according to an information bit for determining the complex channel, however, Bottomley discloses a received baseband signal which is defined in terms of a complex channel coefficient (col. 8, eq. 1, lines 48-51). Because the designation of a complex channel allows for reduced channel interference (col. 8, lines 37-40), it would have been obvious to one skilled in the art at the time of invention to incorporate the complex channel designation as disclosed by Bottomley into the combined invention of Kim and Kishi.

**Claim 9, 18**, Kim discloses modulating in phase and quadrature channels (fig. 1, 13) and spreading the modulated signals by an orthogonal code (fig. 1, 15). Kim further discloses an indexed orthogonal spreading code is used to spread the signals (fig. 1, 15), indicating that this code is one of a plurality of codes. Kim fails to disclose generating a modulated pilot channel at a designated phase, however, Kishi discloses a known phase value is subjected to modulation and then spreading with a specific spreading code to obtain a pilot signal (col. 2, lines 11-14). Because Kishi discloses that this method has the advantage of suppressing disturbance due to fading, etc., (col. 2, lines 17-21), it would have been obvious to one skilled in the art at the time of invention to incorporate the modulation and spreading method of Kishi into Kim. Although neither Kim nor Kishi disclose the modulated pilot output on a designated

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complex channel according to an information bit for determining the complex channel, however, Bottomley discloses a received baseband signal which is defined in terms of a complex channel coefficient (col. 8, eq. 1, lines 48-51). Because the designation of a complex channel allows for reduced channel interference (col. 8, lines 37-40), it would have been obvious to one skilled in the art at the time of invention to incorporate the complex channel designation as disclosed by Bottomley into the combined invention of Kim and Kishi.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin M. File whose telephone number is (571)272-6040. The examiner can normally be reached on M-F 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Erin M. File

EMF

5/15/2006

  
JEAN B. CORRIELUS  
PRIMARY EXAMINER  
5-15-06